

Serial No. 09/433,380
Amdt. Dated February 4, 2005
Reply to Office Action of November 15, 2004

Docket No. MRE-0014

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-9. (Cancelled)

10. (Currently Amended) A multi-stacker for an IC (integrated circuit) handler, comprising:

a stacker frame;

a guide frame positioned below and coupled to a bottom of the stacker frame;

a movement plate configured to move upward and downward within the guide frame; and

a plurality of tray plates stacked on the movement plate and configured to move upward and downward within a guide attached to the guide frame and within the stacker frame;

and

a support portion formed at a lower end portion of the stacker and configured to selectively engage and disengage side end portions of a tray plate of the plurality of tray plates.

Serial No. 09/433,380
Amdt. Dated February 4, 2005
Reply to Office Action of November 15, 2004

Docket No. MRE-0014

11. (Currently Amended) The multi-stacker of claim 10, ~~further comprising wherein~~
~~the support portion comprises~~ at least one stopper mechanism which is configured to prevent one or more tray plates from being lowered from the stacker frame into the guide frame.

12. (Previously Presented) The multi-stacker of claim 11, wherein the at least one stopper mechanism comprises:

a blocking protrusion configured to engage a side edge of one of the plurality of tray plates; and

an actuator coupled to the blocking protrusion and attached to the stacker frame.

13. (Previously Presented) The multi-stacker of claim 12, wherein the actuator is configured to move the blocking protrusion into and out of a path of travel of the plurality of tray plates as the plurality of tray plates move from the stacker frame to the guide frame.

14. (Previously Presented) The multi-stacker of claim 13, wherein the at least one stopper mechanism comprises first and second stopper mechanisms attached to opposite sides of the stacker frame, and wherein the actuator of each stopper mechanism comprises a piston and cylinder.

15. (Previously Presented) The multi-stacker of claim 10, further comprising an elevator mechanism coupled to the movement plate and configured to move the movement plate upward and downward such that tray plates stacked on the movement plate are moved from the guide frame into and out of the stacker frame.

16. (Previously Presented) The multi-stacker of claim 15, wherein the elevator mechanism comprises:

a rail that is movably mounted on the multi-stacker and that is connected to the movement plate;

a rack mounted on the rail;

a motor mounted on the multi-stacker adjacent the rail; and

a pinion gear mounted on a rotating shaft of the motor, wherein the pinion gear engages the rack mounted on the rail, and wherein rotational movement of the pinion gear causes the rail and the movement plate to move upward and downward.

17. (Previously Presented) The multi-stacker of claim 16, further comprising a linear movement block mounted on the multi-stacker and configured to guide movement of the rail.

Serial No. 09/433,380
Amdt. Dated February 4, 2005
Reply to Office Action of November 15, 2004

Docket No. MRE-0014

18. (Previously Presented) The multi-stacker of claim 16, further comprising a support plate connected between the rail and the movement plate and configured to dampen vibrations of the movement plate during movement of the movement plate.

19. (Previously Presented) The multi-stacker of claim 16, further comprising at least one support plate connected to a lower end of the rail and configured to dampen vibrations of the rail during movement of the rail.

20. (Previously Presented) The multi-stacker of claim 10, wherein the guide includes four guide rails that are configured to guide corners of the tray plates as the tray plates move upward and downward with the movement plate.

21. (Previously Presented) The multi-stacker of claim 10, further comprising a sensor configured to determine positions of the plurality of tray plates.

22. (Currently Amended) A multi-stacker for an IC (integrated circuit) handler, comprising:

a guide frame;

Serial No. 09/433,380
Amdt. Dated February 4, 2005
Reply to Office Action of November 15, 2004

Docket No. MRE-0014

a movement plate configured to move upward and downward within the guide frame;

a plurality of tray plates stacked on the movement plate and configured to move upward and downward within the guide frame, wherein each of the tray plates is configured to receive a tray holding a plurality of semiconductor devices; and

at least one stopper mechanism which is configured to selectively engage and disengage with a corresponding side portion of one of the plurality of tray plates so as to prevent one or more tray plates from being lowered as the movement plate moves downward in the guide frame.

23. (Cancelled)

24. (Previously Presented) The multi-stacker of claim 22, wherein the at least one stopper mechanism comprises:

a blocking protrusion configured to engage a side edge of one of the plurality of tray plates; and

an actuator coupled to the blocking protrusion and configured to move the blocking protrusion into and out of a path of travel of the plurality of tray plates as the plurality of tray plates move upward and downward.

Serial No. 09/433,380
Amdt. Dated February 4, 2005
Reply to Office Action of November 15, 2004

Docket No. MRE-0014

25. (Previously Presented) The multi-stacker of claim 22, further comprising an elevator mechanism coupled to the movement plate and configured to move the movement plate upward and downward along the guide frame.

26. (Previously Presented) The multi-stacker of claim 25, wherein the elevator mechanism comprises:

a rail that is movably mounted on the multi-stacker and that is connected to the movement plate;

a rack mounted on the rail;

a motor mounted on the multi-stacker adjacent the rail; and

a pinion gear mounted on a rotating shaft of the motor, wherein the pinion gear engages the rack mounted on the rail, and wherein rotational movement of the pinion gear causes the rail and the movement plate to move upward and downward.

27. (Previously Presented) The multi-stacker of claim 26, further comprising a support plate connected between the rail and the movement plate and configured to dampen vibrations of the movement plate during movement of the movement plate.

Serial No. 09/433,380
Amdt. Dated February 4, 2005
Reply to Office Action of November 15, 2004

Docket No. MRE-0014

28. (Previously Presented) The multi-stacker of claim 26, further comprising at least one support plate connected to a lower end of the rail and configured to dampen vibrations of the rail during movement of the rail.
29. (Previously Presented) The multi-stacker of claim 22, further comprising a sensor configured to determine positions of the plurality of tray plates.
30. (New) A multi-stacker for an IC (integrated circuit) handler, comprising:
 - a stacker frame;
 - a guide frame positioned below and coupled to a bottom of the stacker frame;
 - a movement plate configured to move upward and downward within the guide frame; and
 - a plurality of tray plates stacked on the movement plate and configured to move upward and downward within a guide attached to the guide frame and within the stacker frame, wherein the guide includes four guide rails that are configured to guide corners of the tray plates as the tray plates move upward and downward with the movement plate.